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METHOD OF IMPROVING WELD QUALITY

ABSTRACT OF THE DISCLOSURE

A method of improving weld quality between aluminum members by slowing the rate of solidification of a molten weld trough into solidified material. Upper and lower aluminum members are positioned together in contact between facing surfaces thereof to expose a first outer surface of the upper aluminum member to laser irradiation. A welding laser beam is moved in a path over the first outer surface, wherein the welding laser beam has an energy and width to progressively melt a trough of molten metal to a depth through the upper aluminum member and into the lower aluminum member. The molten metal in the trough has a void filled with gas, and the molten metal re-solidifies into re-solidified metal after the passage of the welding laser beam. An area in and around the trough is heated to slow the rate of solidification of the molten metal into the re-solidified metal, thereby preventing entrainment of the gas within the re-solidified metal.